Appl. No. 10/614,134
Amendment dated February 18, 2010
Reply to Office Action of October 14, 2009

501.37526CX1

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1. (canceled).

2. (currently amended) A packet communication apparatus for transmitting a packet from a first network comprising a first Virtual Private Network (VPN) to a second network comprising a plurality of VPNs, wherein the packet includes a destination Internet Protocol (IP) address Layer 3 (L3) or higher, and a first VPN identifier on Layer 2 (L2) used to ~~compose~~ identify the first VPN in the first network, said packet communication apparatus comprising:

a packet generating unit which generates a second VPN identifier on L2 used to ~~compose~~ identify one of the plurality of VPNs in the second network based on the destination IP address on L3 and the first VPN identifier on L2; and

a transmitter which transmits a packet having added thereto said second VPN identifier on L2[[,]].

~~wherein the first VPN on L2 is interconnected to the plurality of VPNs in the second network.~~

3. (previously presented) A packet communication apparatus according to claim 2, further comprising:

a processing unit which replaces the first VPN identifier with the second VPN

2

identifier.

4. (previously presented) A packet communication apparatus according to claim 2, further comprising:

a route decision processing unit which decides a route to the second network according to the destination IP address and the first VPN identifier.

5. (previously presented) A packet communication apparatus according to claim 2, wherein the packet is an IP packet.

6. (currently amended) A packet communication method of transmitting a packet from a first network comprising a first Virtual Private Network (VPN) to a second network comprising a plurality of VPNs, wherein the packet includes a destination Internet Protocol (IP) address on Layer 3 (L3) or higher and a first Virtual Private Network (VPN) identifier on Layer 2 (L2) used to identifycompose the first VPN in the first network, the packet communication method comprising the steps of:

receiving the packet; and

generating a second VPN identifier on L2 used to identifycompose one of the plurality of VPNs in the second network based on the destination IP address on L3 and the first VPN identifier on L2[[,]].

wherein the first VPN on L2 is interconnected to the plurality of VPNs in the second network.

7. (previously presented) A packet communication method according to

claim 6, further comprising the step of:

replacing the first VPN identifier with the second VPN identifier.

8. (previously presented) A packet communication method according to

claim 6, further comprising the step of:

deciding a route to the second network according to the destination IP

address and the first VPN identifier.

9. (previously presented) A packet communication apparatus according to

claim 4, wherein the packet is an IP packet.

10. (currently amended) A packet communication system comprising:

a first network comprising a first Virtual Private Network (VPN);

a second network comprising:

a plurality of VPNs; and

a router which transmits a packet from the first network to the second network,

wherein the packet includes a destination Internet Protocol (IP) address on

Layer 3 (L3) or higher and a first VPN identifier on Layer 2 (L2) used to

identifycompose the first VPN in the first network, and

wherein the router generates a second VPN identifier on L2 used to

Appl. No. 10/614,134
Amendment dated February 18, 2010
Reply to Office Action of October 14, 2009

501.37526CX1

identify~~compose~~ one of the plurality of VPNs in the second network based on the

destination IP address and the first VPN identifier on L2[[,]].

~~wherein the first VPN on L2 is interconnected to the plurality of VPNs in the~~

~~second network.~~

11. (previously presented) A packet communication system according to

claim 10, wherein the router replaces the first VPN identifier with the second VPN

identifier.

12. (previously presented) A packet communication system according to

claim 10, wherein the router decides a route to the second network according to the

destination IP address and the first VPN identifier.

13. (currently amended) A packet communication apparatus for transmitting

a packet from a first network comprising a first Virtual Private Network (VPN) to a

second network comprising a plurality of VPNs, wherein the packet includes a

destination Internet Protocol (IP) address on Layer 3 (L3) or higher and a first VPN

identifier on Layer 2 (L2) used to identify~~compose~~ the first VPN in the first network,

said packet communication apparatus comprising:

an index generating unit which generates an index based on the destination

IP address on L3 and the first VPN identifier on L2;

a packet generating unit which generates a second VPN identifier on L2 used

to identify~~compose~~ one of the plurality of VPNs in the second network based on the

index; and

a transmitter which transmits a packet having added thereto said second VPN

identifier on L2[[,]].

~~wherein the first VPN on L2 is interconnected to the plurality of VPNs in the~~
~~second network.~~

14. (previously presented) A packet communication apparatus according to

claim 13, further comprising:

a processing unit which replaces the index with the second VPN identifier.

15. (previously presented) A packet communication apparatus according to

claim 13, further comprising:

a route decision processing unit which decides a route to the second network

according to the destination IP address and the first VPN identifier.

16. (previously presented) A packet communication apparatus according to

claim 13, wherein the packet is an IP packet.

17. (currently amended) A packet communication method of transmitting a

packet from a first network comprising a first Virtual Private Network (VPN) to a

Appl. No. 10/614,134
Amendment dated February 18, 2010
Reply to Office Action of October 14, 2009

501.37526CX1

second network comprising a plurality of VPNs, wherein the packet includes a destination Internet Protocol (IP) address on Layer 3 (L3) or higher and a first VPN identifier on Layer 2 (L2) used to identifycompose the first VPN in the first network, the packet communication method comprising the steps of:

receiving the packet;

generating an index based on the destination IP address on L3 and the first VPN identifier on L2; and

generating a second VPN identifier on L2 used to identifycompose one of the plurality of VPNs in the second network based on the index[[,]].

wherein the first VPN on L2 is interconnected to the plurality of VPNs in the second network.

18. (previously presented) A packet communication method according to claim 17, further comprising the step of:

replacing the index with the second VPN identifier.

19. (previously presented) A packet communication method according to claim 17, further comprising the step of:

deciding a route to the second network according to the destination IP address and the first VPN identifier.

20. (canceled).

21. (currently amended) A packet communication system comprising:

a first network comprising a first Virtual Private Network (VPN);

a second network comprising:

a plurality of VPNs; and

a router which transmits a packet from the first network to the second network,

wherein the packet includes a destination Internet Protocol (IP) address on

Layer 3 (L3) or higher and a first VPN identifier on Layer 2 (L2) used to

identifycompose the first VPN in the first network, and

wherein the router generates an index based on the destination IP address on

L3 and the first VPN identifier on L2, and generates a second VPN identifier on L2

used to identifycompose one of the plurality of VPNs in the second network based on

the index[[,]].

wherein the first VPN on L2 is interconnected to the plurality of VPNs in the

second network.

22. (previously presented) A packet communication system according to

claim 21, wherein the router replaces the index with the second VPN identifier.

23. (previously presented) A packet communication system according to

claim 21, wherein the router decides a route to the second network according to the

destination IP address and the first VPN identifier.